

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawaii 96813

July 22, 2009

Board of Land
and Natural Resources
Honolulu, Hawaii

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National
Monument Research Permit to Anthony Montgomery, State of Hawaii, DLNR, DAR, for Access
to State Waters to Document Deep Reef Coral Species

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument research permit to Anthony Montgomery, Aquatic Biologist, Division of Aquatic Resources, pursuant to § 187A-6, Hawaii Revised Statutes (HRS), chapter 13-60.5, Hawaii Administrative Rules (HAR), and all other applicable laws and regulations.

The research permit, as described below, would allow entry and research activities to occur in the Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Nihoa Island
- Necker Island (Mokumanamana)
- French Frigate Shoals
- Pearl and Hermes Atoll
- Kure Atoll State Seabird Sanctuary

The activities covered under this permit would occur from August 6, 2009 through September 4, 2009.

INTENDED ACTIVITIES

The applicant proposes to document coral species in the deep reefs of Papahānaumokuākea. The proposed activity would supplement other currently approved activities, specifically Dr. Kosaki's use of technical diving technology to access the NWHI's deep reefs. During surveys for invasive species (focus on *Carijoa riisei* and *Hypnea musciformis*) that would occur under Dr. Kosaki's permit, opportunistic collections would be made to document coral species in the deep reefs of the NWHI.

To carry out this activity, divers would take still and video records of habitat type and abundant species, as well as conduct searches in open areas and under ledges or overhangs for *Hypnea* and *Carijoa*. If encountered, depth/time would be recorded, which will allow an approximate spatial fix to be established. Corals of interest often share the same habitat characteristics as *Carijoa* and may occur in high densities. Specimens observed to be different than species found in the main Hawaiian Islands would be photographed and a small fragment placed in sealed bags which would be carried to the surface with the divers.

The applicant proposes to collect no more than 5 specimens for each species of scleractinian, antipatharian, alcyonacea, or gorgonacea from each island surveyed (stony corals <15 cm, black corals <50 cm, others < 15 cm). Of these collections, one collection may require the collection of the entire colony based on observed characteristics from in situ observations.

In addition, in order to better characterize the habitat within Mesophotic Coral Ecosystems (MCE) it is proposed to place high resolution temperature sensors across depths and different sites to describe the movement of thermoclines. Temperature (particularly deeper thermoclines) may play a critical role in the distributional patterns of corals including *Carijoa riisei*. Temperature sensors (Tidbit sensors) would be mounted to a 2-lb lead weight attached to a short line (less than 1 m) with a white bucket lid with a label. This is the same marker method used by the Hawaii Undersea Research Laboratory for submersible operations. This marker system works well in high current areas and is highly visible. The deployment of these sensors would include 2-3 sensors placed across depth ranges (100-300') at each island (less than 20 total) and left in place for retrieval in 1-2 years.

The activities described above would begin to develop a baseline for coral species identification for MCEs in the NWHI. Over the past year in the MHI, at least 3 potential new species have been found in these depth ranges by similar simple surveys and collections.

The activities proposed by the applicant directly support the Monument Management Plan's priority management needs 3.1 – Understanding and Interpreting the NWHI (through action plan 3.1.1 – Marine Conservation Science). Activity MCS 1.3 specifically details plans to map and characterize deep-water habitats using technologies such as technical diving.

The activities described above may require the following regulated activities to occur in State waters:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- ☒ Touching coral, living or dead
- ☒ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and

Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since March 12th, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Comments received from the scientific community are summarized as follows:

Scientific reviews support the acceptance of this application.

Questions raised were:

1. What information does the applicant intend to obtain from the sample collections?
2. How would collection impact will be determined?
3. Who would serve as the identification experts for each coral type?

Comments received from the Native Hawaiian community are summarized as follows:

Cultural reviews support the acceptance of this application. No concerns were raised.

Comments received from the public are summarized as follows:

No comments were received from the public on this application.

Additional reviews and permit history:

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g. MMPA, ESA, EA) Yes ☒ No ☐

If so, please list or explain:

- The proposed activities are in compliance with the National Environmental Policy Act and HRS Chapter 343.

Has Applicant been granted a permit from the State in the past? Yes ☐ No ☒

If so, please summarize past permits:

Have there been any a) violations: Yes ☐ No ☒
b) Late/incomplete post-activity reports: Yes ☐ No ☒

Are there any other relevant concerns from previous permits? Yes ☐ No ☒

RESPONSE:

1. The Applicant explains that several things would be done with the samples. One, a species identification would be made and, if new, a species description would be made. Two, the specimens would be used to compare genetic similarities with populations in the Main Hawaiian Islands providing there is species overlap. Three, histology would be conducted on the appropriate samples and the reproductive characters would be described to the extent possible and compared the samples in the Main Hawaiian Islands.
2. The Applicant points out that collections would be made very carefully. If there is only a single specimen in an area, the entire colony would not be taken, but rather a small clipping. The entire colony would only be taken if it appears there are several similar ones in the area. He explains that it is not the intent of this project to take the last or rare coral from an area, but rather document its presence. However, full, reliable species identification often occurs in the lab and may require more than a small clipping.
3. The applicant states that given the limited numbers of collections proposed and the difficulty of identifying "unique" specimens, he would be the only person collecting specimens in the field. The applicant also provided the names of several University of Hawaii and Bishop Museum staff who would serve as identification experts on samples brought back to Oahu.

STAFF OPINION:

DAR staff is of the opinion that Applicant has properly demonstrated valid justifications for his application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with the following special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Permit General Conditions. The following special conditions have been vetted through the legal counsel of the Co-Trustee agencies.

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.

5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge
6. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.

MONUMENT MANAGEMENT BOARD OPINION:

The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by DAR staff.

RECOMMENDATION:

“That the Board authorize and approve, with stated conditions, a Research Permit to Anthony Montgomery, State of Hawaii, DLNR, DAR.”

Respectfully submitted,



DAN POLHEMUS
Administrator

APPROVED FOR SUBMITTAL



LAURA H. THIELEN
Chairperson

Papahānaumokuākea Marine National Monument
RESEARCH Permit Application

NOTE: *This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).*

ADDITIONAL IMPORTANT INFORMATION:

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.
- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.
- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

Send Permit Applications to:

Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
nwhipermit@noaa.gov
PHONE: (808) 397-2660 FAX: (808) 397-2662

**SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR
ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.**

Papahānaumokuākea Marine National Monument Permit Application Cover Sheet

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

Summary Information

Applicant Name: Anthony Montgomery

Affiliation: State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources

Permit Category: Research

Proposed Activity Dates: August 6-September 4, 2009

Proposed Method of Entry (Vessel/Plane): NOAA Ship HI'IALAKAI

Proposed Locations: Nihoa, Necker, French Frigate Shoals, Pearl and Hermes, Midway, Kure, others TBD

Estimated number of individuals (including Applicant) to be covered under this permit:

11

Estimated number of days in the Monument: 25

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...

The proposed activity would supplement other proposed activities (see Kosaki--Use of conventional and technical diving technology to document the biodiversity of the NWHI's deep reefs). During surveys for invasive species (focus on *Carijoa riisei* and *Hypnea musciformis*) collections will be made to document coral species in the deep reefs of the NWHI. Mesophotic Coral Ecosystems (MCE) have gained more interest in recent years due to the role it may play in the larger coral reef ecosystem. Corals including scleractinians, antipatharians as well as octocorallians can be foundational species in these ecosystems. These collections will be opportunistic during the invasive species surveys.

In addition, in order to better characterize the habitat within MCE it is proposed to place high resolution temperature sensors across depths and different sites to describe the movement of thermoclines. Temperature (particularly deeper thermoclines) may play a critical role in the distributional patterns of corals including *Carijoa riisei*.

b.) To accomplish this activity we would

To accomplish this activity we would collect no more than 5 specimens for each species of scleractinian, antipatharian, alcyonacea, or gorgonacea from each island surveyed. Of these collections, one collection may require the collection of the entire colony based on observed characteristics from in situ observations.

Temperature sensors (Tidbit sensors) will be mounted to a 2-lb lead weight attached to a short line (less than 1 m) with a white bucket lid with a label. The deployment of these sensors will include 2-3 sensors placed across depth ranges (100-300') at each island and left in place for retrieval in 1-2 years.

c.) This activity would help the Monument by ...

These collections will begin to develop a baseline for coral species identification for MCEs in the NWHI. Over the past 1 year in the MHI, at least 3 potential new species have been found in these depth ranges. A possible new scleractinian, antipatharian, and gorgonian have been found in the past year by simple surveys and collections. Understanding the presence coral species is vital to understanding the threat of invasive species (such as *Carijoa riisei* and *Hypnea musciformis*) to MCE biodiversity in the NWHI. Also, understanding the variations in the temperature may allow a better understanding of the potential threat of invasive species and the vertical distributions of coral in general.

Other information or background:

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Montgomery, Anthony D.

Title: Aquatic Biologist IV

1a. Intended field Principal Investigator (See instructions for more information):

Anthony Montgomery

2. Mailing address (street/P.O. box, city, state, country, zip):

Phone:

Fax:

Email:

For students, major professor's name, telephone and email address:

3. Affiliation (institution/agency/organization directly related to the proposed project):

State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources

4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):

Kelly Gleason, PhD. Research Diver, NOAA PMNM

Elizabeth Keenan, M.S., Research Diver, NOAA PMNM

Randal Kosaki, Ph.D., Research Diver and Chief Scientist, NOAA PMNM,

Ray Boland, Research Diver, NOAA NMFS PIFSC

Corinna Kane, M.S., Research Diver, State of Hawaii DLNR DAR,

Richard Pyle Ph.D., Research Diver, B.P. Bishop Museum,

Greg McFall M.S., Research Diver, NOAA Grays' Reef National Marine Sanctuary

Tane Casserly, M.S., Research Diver, NOAA Thunder Bay National Marine Sanctuary

Yannis Papastamatiou, Ph.D. Research Diver, Hawaii Institute of Marine Biology

Section B: Project Information

5a. Project location(s):

<input checked="" type="checkbox"/> Nihoa Island	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Necker Island (Mokumanamana)	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> French Frigate Shoals	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Gardner Pinnacles	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Maro Reef			
<input type="checkbox"/> Laysan Island	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Lisianski Island, Neva Shoal	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Pearl and Hermes Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Midway Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Kure Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Other			

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

Location Description:

Sites will be at depths of 30-100 m at to be determined locations within each listed island.

5b. Check all applicable regulated activities proposed to be conducted in the Monument:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- ☐ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- ☐ Anchoring a vessel
- ☐ Deserting a vessel aground, at anchor, or adrift
- ☐ Discharging or depositing any material or matter into the Monument
- ☒ Touching coral, living or dead
- ☐ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- ☐ Attracting any living Monument resource
- ☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- ☐ Subsistence fishing (State waters only)
- ☒ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

6 Purpose/Need/Scope *State purpose of proposed activities:*

The proposed activities address PMNM Management Plan's Marine Conservation Science Action plan to 'develop baseline inventory of the biological resources and biodiversity of deep reefs using all available technologies, including remotely operated vehicles and technical diving.'

7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?

No activities will be performed in the vicinity of known cultural or historical resources. If any such resources are discovered in the course of these proposed activities, their location(s) will be noted and reported to appropriate authorities. Our survey activities will cease immediately, and will be continued in another area.

Biological sampling will be limited to small numbers of voucher specimens for taxonomic ID and genetic analysis. If potential new records or new species of corals are encountered, they will be photographed (and video) and a fragment collected and placed in a sample bag. This method has no potential for collateral damage and are highly selective. One entire colony may be collected for further taxonomic analysis (not to exceed one per island. No poisons or explosives will be used.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects? The proposed activities are not believed to diminish resources within the monument, but rather better describe the natural resources of the MCE habitats of the monument.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.

In order to investigate the biological diversity of the monument, collections must come from the monument. In order to describe the temperature profiles and their influence on coral and invasive species distribution, sensors must be placed in monument waters.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

The proposed collections will have minimal impacts on native species, natural resources, or ecological integrity. Most collections will only be a fragment from colonial organisms and only a few specimens across the monument will be removed entirely. The end value will far outweigh

the very minimal impacts by developing a baseline understanding of the coral species for MCEs in the monument.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

Given the large areas of MCEs that remain unexplored and uncharacterized, there is no way that this first preliminary effort could be regarded as "longer than necessary." It will be minimally adequate to enable a qualitative comparison of species presence and temperature profiles across sites in the monument.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

I have been a biologist with the Department of Land and Natural Resources for 6 years. I have extensively studied MCEs for over 10 years. I serve as the point of contact for the Department for precious corals and other deep water corals (>30m). I have experience in collecting samples from deep water using both technical diving as well as submersibles. I have been the chief scientist on previous cruises working on MCEs in the MHI. I am the Diving Safety Officer for the Division of Aquatic resources and have extensive experience with using both open circuit and closed circuit SCUBA for research and management activities.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

These activities are opportunistic to ongoing work related to the development of an Integrated Assessment for *Carijoa riisei* in the MHI. Very little resources are required to complete these opportunistic collections. Identifications and costs associated with these will be covered by DLNR and its partners (Smithsonian Institution and University of Louisiana among others).

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

The proposed methods limit the number of specimens taken to the minimum number that will ensure accurate taxonomic identification. The numbers required will be many orders of magnitude below that which would produce a measurable or biologically significant impact to the ecological integrity of the Monument. In addition, most of the collections will be relatively small fragments from colonial organisms allowing the organism to remain in place and continue to grow and reproduce. Only a very few whole colonies will be taken, and again the numbers are far below any measurable impact to the monument. A few entire colonies are required to accurately describe the species using morphological characters. Only one is needed for each potential species and new species/ morphologies are expected to be founded, but this is a vital component in order to fully detail the colonies characteristics. There will be no interaction with cultural or historical resources.

i. Has your vessel been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

Yes

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.

There are no other factors that would make issuance of a permit inappropriate under the Proclamation and its Findings section. The sample sizes are very small, the information potentially gained is invaluable to managers, and the people recruited to staff this project are among the very best in the world when it comes to characterization of deep reefs.

8. Procedures/Methods:

Technical diving will be conducted under NOAA auspices, and will conform to the regulations of the NOAA Dive Center as well as the Division of Aquatic resources Diving Safety Program. Dive sites will be determined in advance through habitat suitability modeling based on bathymetry. Divers will enter the water from, and be recovered by, the primary dive platform, an 11m Ambar boat (HI-1) launched from the starboard davit aboard Hi`ialakai. HI-1 will also have on board a backup diver with full SCUBA gear who will be available to assist the primary divers with bottle swaps, etc., during decompression. The dive team and primary dive boat will be shadowed by a 19' SAFEboat chase boat, which will have on board a backup technical diver with a full technical trimix rig. The chase boat will be available to follow a separate lift bag or float should the members of the primary dive pair become separated. Both boats will be operated by dedicated coxswains who will not be diving. Boats will be within clear radio range of Hi`ialakai at all times.

The primary dive team will be dropped on pre-determined sites. All dives will be conducted while live-boating, i.e. no anchoring. Bottom times of 60 minutes or less are expected in waters over 200' (largely depending on open circuit or closed circuit configurations). No dives in excess of 300' will be conducted. During the dive, divers will take still and video records of habitat type and abundant species, as well as conduct searches in open areas and under ledges or overhangs for *Hypnea* and *Carijoa*. If encountered, depth/time will be recorded, which will allow an approximate spatial fix to be established based a GPS unit affixed to an attached PAM float carried by the dive team. Corals of interest often share the same habitat characteristics as *Carijoa* and may occur in high densities. Specimens observed to be different than species found in the MHI will be photographed and a small fragment placed in sealed bags and will be carried to the surface with the divers. If the colony is significantly unique or different, one whole colony will be collected for detailed identification and used as the type specimen if discovered to be new to science. Decompression times between 30 and 100 minutes are expected, and decompression will be conducted while drifting in blue water. A lift bag or float will enable the support boats to remain in close proximity to the divers at all times.

A Deep Ocean Engineering ROV (remotely operated vehicle) or drop camera may be opportunistically used from Hi`ialakai to ground-truth bathymetry and confirm bottom conditions at potential dive sites.

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a

customized application will be needed. For more information, contact the Monument office on the first page of this application.

9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):

Common name:

Stony Coral

Black Coral

Seafan

Soft Coral

Scientific name:

Leptoseris spp

Montipora spp.

Anacropora spp.

Portites spp.

Pocillopora spp.

Dendrophyllid spp.

Antipathes spp.

Apahniopathes spp.

Allopathes spp.

Myriopathes spp.

Cirrhipathes spp.

Stichopathes spp.

Alcyonacea spp.

Gorgonacea spp.

Other groups not readily identifiable

& size of specimens:

5 specimens for each species (stony corals <15 cm, black corals <50 cm, others < 15 cm)

Of the 5 specimens, one may be a whole colony (stony corals <30 cm, black < 1m, others <30cm)

Collection location:

Nihoa, Necker, Mokumanama, French Frigate Shoals, Pearl and Hermes, Midway, Kure

Specific latitude/longitude of dive sites will be determined by NCCOS habitat suitability models, and weather.

☒ Whole Organism ☒ Partial Organism

9b. What will be done with the specimens after the project has ended?

Stony Coral specimens will be given to the B.P. Bishop Museum for curation while black corals will be given to the Smithsonian Institution for curation, and other corals will be given to the B.R. Bishop Museum. All corals will have genetic samples preserved and given to Hawaii Institute of Marine Biology. Black coral genetic samples will also be providing to Dr. Scott France at the University of Louisiana at Lafayette. Some specimens may remain in the possession of the State of Hawaii, DLNR for further examination.

9c. Will the organisms be kept alive after collection? ☐ Yes ☒ No

• General site/location for collections:

TBD. Generally, the highest probability for encountering Hypnea and Carijoa is in deeper waters between 35 and 100 m. Some surveys will be conducted in less than 30 m, as in shallow-water habitats characterized by boulders and overhangs, Carijoa may be found in these shaded, sheltered recesses. However, since RAMP surveys have not noted these species in the NWHI, it seems unlikely that any will be collected in less than 30 m. Habitat suitability models (utilizing existing multibeam bathymetry) that take into account depth ranges, bottom type (hard/soft), rugosity, and slope are being generated by NOAA NCCOS. These will be completed before the cruise, and will be used to target highest probability areas for encountering Hypnea or Carijoa.

• Is it an open or closed system? ☐ Open ☐ Closed

• Is there an outfall? ☐ Yes ☐ No

• Will these organisms be housed with other organisms? If so, what are the other organisms?

• Will organisms be released?

10. If applicable, how will the collected samples or specimens be transported out of the Monument?

Specimens will be preserved with four different methods. Samples will be placed in 95% ethanol, Dimethyl Sulfoxide (DMSO), Formilin, and dead, dried skeletons. All samples will be placed in a storage case to protect all samples and sealed for transport between islands and the return trip to the MHI.

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:

Samples will be shared as much as possible with partner agencies. All genetic samples will be duplicated with one set going to HIMB and the other to DLNR or University of Louisiana. Dried and formalin preserved samples will be shared with HIMB, Smithsonian and DLNR. Samples held at DLNR may be shared with various coral researchers in Hawaii.

12a. List all specialized gear and materials to be used in this activity:

Technical dive gear, including helium-oxygen-nitrogen compressed gas breathing mixes, and nitrox or 100% oxygen decompression mixes. Collecting will include small prybars or scissors and sample bags.

12b. List all Hazardous Materials you propose to take to and use within the Monument:

95% ethanol, Dimethyl Sulfoxide (DMSO), and 37% Formalin

13. Describe any fixed installations and instrumentation proposed to be set in the Monument:

Less the 20 temperature sensors will be placed across 7 islands. The sensors (Tidbitsv2) will be taped and tied to a 2-lb lead weight. The lead weight will have a short line tied to it with a float. The float will consist of a bucket lid with label and contact information. This is the same marker method used by the Hawaii Undersea Research Laboratory for submersible operations. This marker system works well in high current areas and is highly visible. These sensors can collect up to 42,000 data points at any interval programmed. It is estimated that they will be retrieved within 2 years.

14. Provide a time line for sample analysis, data analysis, write-up and publication of information:

Sample identification can begin immediately and partly before the return to Honolulu. However, other more difficult samples to identify can takes several months to finish due to the shortage of time for expert taxonomists. Temperature data can not be analyzed until their retrieval.

15. List all Applicants' publications directly related to the proposed project:

CV attached

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as "confidential" prior to posting the application.

Signature

Date

**SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE
BELOW:**

Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
FAX: (808) 397-2662

DID YOU INCLUDE THESE?

- ☒ Applicant CV/Resume/Biography
- ☒ Intended field Principal Investigator CV/Resume/Biography
- ☒ Electronic and Hard Copy of Application with Signature
- ☐ Statement of information you wish to be kept confidential
- ☐ Material Safety Data Sheets for Hazardous Materials

Papahānaumokuākea Marine National Monument Compliance Information Sheet

1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant):

Anthony Montgomery, collector
Corrine Kane, dive buddy
Randy Kosaki, dive buddy
Kelly Gleason, dive buddy
Elizabeth Keenan, dive buddy
Ray Boland, dive buddy
Rich Pyle, dive buddy
Yannis Papastamatiou, dive buddy

2. Specific Site Location(s): (Attach copies of specific collection locations):

Nihoa, Necker (Mokumanamana), French Frigate Shoals, Pearl and Hermes Atoll, Midway, Kure

3. Other permits (list and attach documentation of all other related Federal or State permits):

None

3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation.

4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information): Carijoa surveys are funded through a NOAA NOS grant to develop an Integrated Assessment for *Carijoa riisei* (\$50,000 per year for 2 years). Data collected on the surveys will help develop a large-scale distribution map of Carijoa north of Kauai. Most coral collections are not directly funded, but also do not require much funding to process and will be collected opportunistically during Carijoa surveys.

5. Time frame:

Activity start: Aug 8, 2009

Activity completion: Sep 6, 2009

Dates actively inside the Monument:

From: Aug 8, 2009

To: Sep 4, 2009

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application: The ship schedule may be subject to change due to weather or other unforeseen events.

Personnel schedule in the Monument: To be determined

6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:

The State of Hawaii employees are self insured as per the Department of Accounting and General Services.

7. Check the appropriate box to indicate how personnel will enter the Monument:

- ☒ Vessel
☐ Aircraft

Provide Vessel and Aircraft information:

NOAA Vessel Hiialakai

8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation):

- ☐ Rodent free, Date:
☐ Tender vessel, Date:
☐ Ballast water, Date:
☐ Gear/equipment, Date:
☐ Hull inspection, Date:

9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):

Vessel name:

Vessel owner:

Captain's name:

IMO#:

Vessel ID#:
Flag:
Vessel type:
Call sign:
Embarkation port:
Last port vessel will have been at prior to this embarkation:
Length:
Gross tonnage:
Total ballast water capacity volume (m3):
Total number of ballast water tanks on ship:
Total fuel capacity:
Total number of fuel tanks on ship:
Marine Sanitation Device:
Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:
Inmarsat ID#:

10. Tender information:

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:

Additional Information for Land Based Operations

11. Proposed movement of personnel, gear, materials, and, if applicable, samples:

12. Room and board requirements on island:

13. Work space needs:

DID YOU INCLUDE THESE?

- ☐ Map(s) or GPS point(s) of Project Location(s), if applicable
- ☐ Funding Proposal(s)
- ☐ Funding and Award Documentation, if already received
- ☐ Documentation of Insurance, if already received
- ☐ Documentation of Inspections
- ☐ Documentation of all required Federal and State Permits or applications for permits